Claims

I claim:

    1. A ranking-based dark compensation circuit comprising:

    a set of comparators, wherein each comparator is coupled to an associated

5   temporary result register, each comparator comprising a first input and a second input,

the first coupled to receive an incoming sample and the second input coupled to an output

of the associated temporary register to receive a value stored in the associated temporary

register, and each comparator compares the incoming sample with the stored temporary

register value; and

10   if the value of the sample is greater than the value of the temporary register, then

provides that sample to a next comparator or, if there is no next comparator, to a discard

area; and

    if the value of the sample is less than the value of the temporary register, then

stores that sample in the temporary register and provides the value of the temporary

15   register to a next comparator or, if there is no next comparator, to a discard area; and an

output value stored in the kth temporary result register.

    2. The circuit of claim 1 additionally comprising a global reset line.

20   3. The circuit of claim 1 wherein the number of samples and the number of

comparators are variable.

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4. A ranking-based automatic dark compensation method for a dark

compensation circuit comprising a set of k numbered comparators, comprising the steps

of:

initializing a set of temporary result registers with a maximum dark value;

5   providing a sequence of samples to the set of k comparators, wherein each

comparator is coupled to an associated temporary result register, and each comparator

executes the following steps:

comparing the sample to the value of the associated temporary result

register, wherein

10   if the value of the sample is greater than the value in the temporary

register, then providing that sample to a next comparator;

if the value of the sample is less than the value in the temporary register,

then storing that sample value in the first temporary register and providing the

original

value of the temporary register to a next comparator;

15   discarding the values that output the kth comparator; and

providing a dark compensation value output in the kth temporary register as an

output of the dark compensation circuit.

5. The method of claim 4 comprising the additional step of resetting the entire

20   circuit by means of a global reset line.

6. The method of claim 4 wherein the number of samples and the number of

comparators are variable.